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ABSTRACT

This research proposal is designed for the Montgomery County, Maryland, Public School System with the aim of documenting and analyzing changes that occur when 14 of the 22 high schools in the system switch from a six- to a seven-period schedule. The seven-period time table is being adopted in order to (1) allow students taking full academic loads the opportunity of taking special electives and advanced level courses; (2) reduce students' scheduling conflicts; (3) provide more time for teachers to engage in activities with individual students, while being involved in departmental and team planning; and (4) enable schools with smaller staffs to offer courses comparable in size to schools with larger staffs. The goals of the study include monitoring and analyzing the amount and kinds of additional courses taken by students, effects of the proposed changes in the length of class period on the teachers and students, and the added cost of staffing and transportation to the school system. Also included in the proposal is information on the type of instrument to be used as well as the collection and analysis of the data. (AOS)

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MONTGOMERY COUNTY
PUBLIC SCHOOLS
ROCKVILLE, MARYLAND

Research Plan For The Study of Senior High School Alternative Scheduling Systems in the Montgomery County Public School System

January, 1983

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MONTGOMERY COUNTY PUBLIC SCHOOLS
Rockville, Maryland

RESEARCH PLAN FOR THE STUDY OF SENIOR HIGH SCHOOL ALTERNATIVE SCHEDULING SYSTEMS IN THE MONTGOMERY COUNTY PUBLIC SCHOOL SYSTEM

By

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December 1982

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INTRODUCTION

In the 1982-83 school year, the Montgomery County public school system will implement a seven-period schedule in 14 of its 22 senior high schools. Ten of the 14 schools have comparatively small student populations--under 1,300. These schools will operate on a standard seven-period schedule. Three of the four remaining high schools have populations greater than 1,300. These schools plus the fourth smaller school will operate on experimental or modified forms of the seven-period schedule.

The seven-period schedule is not new to the school system. It is currently in use at the junior high or middle school level and has been in effect on an intermittent basis at the senior high school level since the 1960s. The advantages and disadvantages of the seven-period schedule have been cited over the years and will be briefly reviewed as they pertain to this study.

The current purpose of the research is to set forth a plan that will document and analyze the changes that occur when high schools move to a seven- from a six-period schedule. In general, the purpose of the research will be to identify, describe, and compare the effects of alternative scheduling systems upon schools. Among other goals, this study will monitor the amount and kinds of additional courses taken by students, the effect upon teachers and students of changes in the length of a class period, and the added cost to MCPS in staffing and transportation. Briefly summarized, the goals of the current effort as they pertain to the provisions of the research plan are the following:

- The seven-period schedule will enable high school students who are pursuing a full academic program an opportunity to take special electives and advanced level courses.*
- The seven-period schedule will reduce scheduling conflicts for students by reducing the number of singletons.
- The additional Instructionally Related Activity (IRA) period will provide added time for teachers to engage in a range of other activities such as small group work, supervision of independent study programs, increased opportunity for departmental and team planning.
- The seven-period schedule will enable high schools with smaller staffs to offer a schedule of courses comparable to those offered by the high schools with larger staffs.

*The term special elective refers to courses which are not required for graduation. The term advanced academic courses refers to such courses as French VI, European History, and Probability and Statistics.

INDIRECT EFFECTS OF THE SEVEN-PERIOD SCHEDULE

While the seven-period schedule may offer clear and direct advantages to many students and schools, it also engenders indirect and even some less desirable effects. Cited here are some of the criticisms that will be addressed by the research plan. They include the following:

- The seven-period schedule provides teachers with an additional nonteaching period. Schools will implement an Instructionally Related Activity schedule to enable teachers to use this period in a constructive manner for the benefit of the students and school. It is possible that these activities will not benefit anyone and the time will be wasted.

- The seven-period schedule requires that a school increase its staff by approximately 14 percent and thereby increases the financial burden to the MCPS system.

- The seven period schedule shortens the instructional period, reduces student exposure to academic courses and, possibly, learning.

- Classes such as physical education and labs which require extended start-up and close-down times are said to be especially hard hit by a reduction in the class period.

- Eleventh and twelfth grade students who are not motivated by school will have even greater problems establishing an acceptable schedule. This may lead to increased disruptive behavior and supervision problems.

GOALS OF THE ALTERNATIVE SEVEN-PERIOD SCHEDULE

During the 1981-82 school year, all high schools but one--Poolesville Junior and Senior High--were returned to a six-period schedule. Currently, MCPS is considering reimplementing the seven-period schedule in <u>all</u> senior high schools as a result of two complementary trends. First, additional funds are now available as a result of savings from recent school closings. And, second, more high schools are now automatically eligible for additional staffing as their student populations dwindle to below 1,300.* Thus, for most schools, the required staffing for a seven-period schedule is already in place. The major cost for full implementation would derive from additional staffing of the larger high schools. In exploring avenues for full implementation, two questions arise:

- What is the extent and direction of student interest in additional course offerings?

- Can alternative or modified seven-period schedules meet student needs at reduced cost to MCPS?

To answer these questions, MCPS will implement two experimental schedules at four high schools. The first experimental schedule--the Optional Seventh

*MCPS provides additional staffing to enable smaller schools to offer a full academic course of study on a par with larger schools.

Period--will be tried at Gaithersburg and Albert Einstein Highs. Students will be given a choice of enrolling in a seven- or a six-period schedule. Each school will require an additional bus run to transport all students.

Einstein and Gaithersburg will differ in two dimensions. Einstein will offer the added, optional course in the morning, before the beginning of the regular six-period schedule; Gaithersburg will offer the added course at day's end. Also, at Einstein the majority of students walk to school, whereas at Gaithersburg the majority are bussed. Thus, these experimental schedules should also answer the following questions:

- Does the time of day at which an optional course is offered affect student interest?
- What are the transportation costs and other problems involved in making an added bus run?
- What is the effect of school proximity upon student involvement in a seven-period day?

The second experimental schedule--study halls--will be tried at Sherwood and Bethesda-Chevy Chase High Schools. At these schools, students will be offered the options of taking seven subjects or six subjects plus a study hall. This obviates the need for an extra bus. These schools also differ in the extent to which students rely on bussing to get to and from school. At Bethesda-Chevy Chase, the vast majority of students walk; at Sherwood, the majority of students are bussed.

Study hall will be implemented for the first time at these two schools. Also, at these schools and at all other seven-period schools, an Instructionally Related Activity period will be implemented for teachers. Four additional questions address the effects of these innovations:

- To what extent will enrollments in study halls affect students' school work?
- Will study halls reduce the need for added staff?
- To what extent are study hall students similar to the school population at large in terms of grade level?
- What is the effect, if any, of coming to school early or late upon student interest in a seven-period course schedule?

The seven-period schools and their scheduling status and estimated enrollments are shown in Table 1 on page 4.

TABLE 1

Categorization of Seven-Period Schools by Estimated 1982-83 Enrollment and Scheduling Alternative

	Bethesda-Chevy Chase	Damascus	Albert Einstein	Gaithersburg	Walter Johnson	Richard Montgomery	Magruder	Northwood	Paint Branch	Peary	Poolesville	Sherwood	Wheaton	Woodward
stimated 982-83 nrollment	1797	1120	1033	1459	1189	1188	1215	1313	1006	977	707	1300	99[illegible]	1080
ype of chedule: xperimental (E)* r Nonexperi- ental (NE)	E	NE	E	E	NE	NE	NE	NE	NE	NE	NE	E	NE	NE

* Experimental schools will implement the optional seven-period system or study hall, while nonexperimental schools will implement a simple seven-period scheduling system.

7pb

JUU 9

RESEARCH OBJECTIVES

Our research objectives are drawn from the MCPS goals and concerns regarding the seven-period schedule. The study's mandate is to:

a. Provide a basic description of the effects and practices associated with the three different plans for the seven-period day (the regular and two alternatives) by documenting the changes for students, teachers, and others

b. Assess the extent to which the goals of this new schedule are being met

c. Account for changes that occur in enrollment and staffing; to determine how schools implemented the Instructionally Related Activity, study hall, and the optional seventh period; and to determine problems confronted and solutions devised

d. Relate these occurrences to the unique external and internal characteristics of the local school as they impinge upon the seven-period schedule.

e. Draw from this accumulated body of data a comparison between sites, experimental and nonexperimental, and between six- and seven-period schools to assess the relative cost effectiveness.

The study's data collection instruments are designed in such a way that data from teachers or students can be pooled and repooled to enable descriptions of groups such as "all students" or "all teachers" as well as cases or individual schools as deemed appropriate. The data collected will enable the following:

- Explanation of the effects of the seven-period school without regard to individual features of the site

- Explanation of the effects of the seven-period schedule which are the result of local school features and conditions

The problem for data analysis will be to compare the schools and to determine whether their differences (the extent and kind of student interest, the effects upon school organization, and added financial burden to MCPS) lie in the goals of the program or the characteristics of the school (size, academic orientation of students, and transportation activities). In addition, the study will attempt to forecast the added cost and effects of full implementation of seven-period scheduling upon current six-period schools under the different plans.

Because the number of schools involved in the study is relatively small, much of what will be learned will be presented in a case study format. While the case study approach requires that findings be carefully qualified, it offers important advantages. First, it enables isolation of particular effects of seven-period scheduling upon individual schools, and second, it increases reliability and validity of inferences by avoiding statistical restrictions. And, third, the source of different outcomes can be closely analyzed on a case-by-case basis.

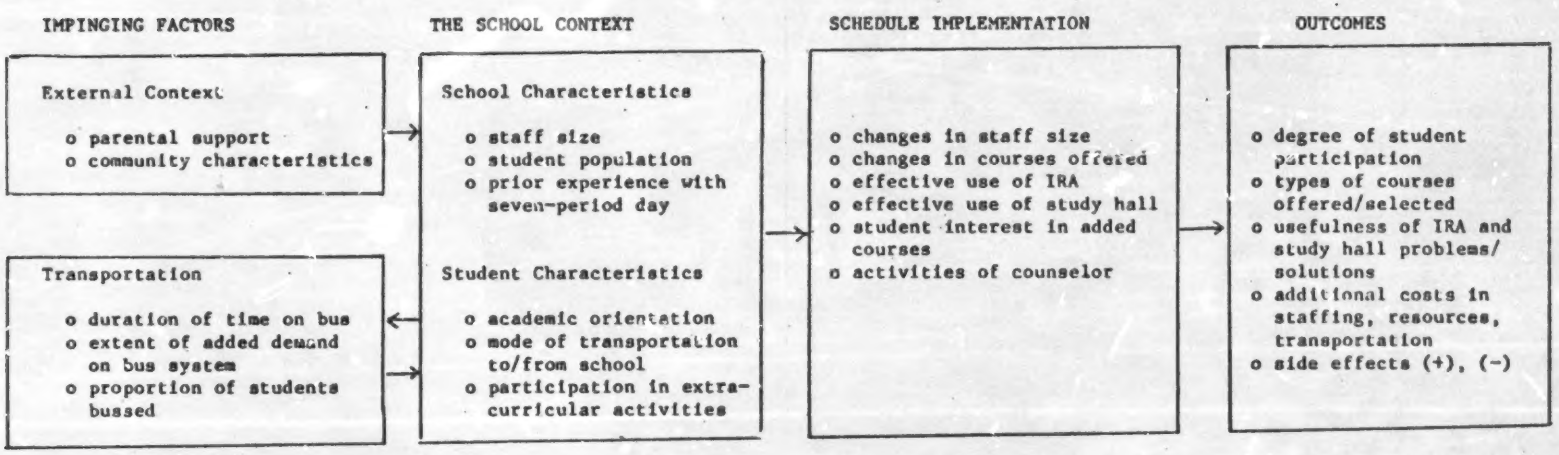
CONCEPTUAL MODEL

In accordance with the MCPS Board's need for information on the direct effects of alternative scheduling systems, the primary activities of the study will be to gather and analyze enrollment and course offering, study hall, Instructionally Related Activity, transportation cost data, and attitudinal data generated by students and teachers. However, such data if analyzed in isolation of other factors may limit the accuracy of the study findings. Other "impinging" factors can exert an effect on the goals of the new schedule. To the extent possible, the study will examine these impinging factors and assess their effects.

These factors can be both external and internal to the individual schools. External factors might include the proportion of students occupied by after-school jobs or other nonschool activities. Also, the mode and duration of transportation to and from school, as well as the proportion of students bussed, may create a larger context in which individual students decide to participate in a seven-period schedule. The size of the school, which affects its ability to establish a full range of course offerings, may also be an important factor. Finally, implementation of the alternative schedule itself will affect the schools in several ways: staff size will increase and Instructionally Related Activities will be tested. The Instructional-Related Activity program will require experimentation with new activities and new modes of staff coordination. These factors will be considered by the study and may be modeled as seen in Table 2.

TABLE 2

Conceptual Model of the Effect of a Scheduling System upon School and Students


IMPINGING FACTORS
THE SCHOOL CONTEXT
SCHEDULE IMPLEMENTATION
OUTCOMES
External Context
o parental support
o community characteristics
Transportation
o duration of time on bus
o extent of added demand on bus system
o proportion of students bussed
School Characteristics
o staff size
o student population
o prior experience with seven-period day
Student Characteristics
o academic orientation
o mode of transportation to/from school
o participation in extra-curricular activities
o changes in staff size
o changes in courses offered
o effective use of IRA
o effective use of study hall
o student interest in added courses
o activities of counselor
o degree of student participation
o types of courses offered/selected
o usefulness of IRA and study hall problems/solutions
o additional costs in staffing, resources, transportation
o side effects (+), (-)

LIMITATIONS OF THE STUDY

This brings us to the limitations of the study. As the number of schools to be analyzed is small--22 senior high schools--and as they differ in important ways, it will be necessary to compare schools to one another with great caution. In order to be more assured that the between-school differences and/or similarities to be found are the result of scheduling changes and not other factors, the study will also compare seven-period schools to themselves during their prior six-period year schedule. This second mode of within-school comparison should better enable the study to determine changes that are the result of the new schedule from changes that are the result of school size and other contextual factors.

A second limit of the study plan must be noted. As the findings of the study will be delivered to the Board in a timely fashion, the study report will be phased with certain findings being provided in fall, 1982, and additional findings reported next summer. The findings in the fall report may be somewhat biased as some single semester courses such as sociology are traditionally offered in the second semester only. However, the extent to which courses are not equally distributed over the school year can be assessed in a preliminary fashion through interviews with scheduling coordinators and review of master schedules. By these means, the extent of bias in current course offerings can be considered in writing the initial report. The final report will include an analysis of second semester changes in enrollment, staffing, and transportation, thus yielding a more balanced picture of the effect of the scheduling alternatives. See page 18 for a more detailed review of the planned reports.

SAMPLING

While a total of ten of the smallest senior high schools are scheduled to implement the nonexperimental, standard seven-period schedule, only four of this group will be included in the interview and questionnaire activities. These four schools will be selected on the basis of the extent to which they are similar to each of the four experimental schools in terms of number of students bussed, school size and location (rural, urban, suburban). By closely investigating four of the 10 smaller schools, the total costs of the study will be reduced; yet it will enable the study to make limited inferences on the possible effects of implementing an experimental schedule in a currently nonexperimental school. Experimental and nonexperimental schools will be matched by the end of the first week of the study after preliminary data has been collected.

While enrollment, course offering, and staffing data will be collected from all MCPS senior high schools, the study will focus upon the previously mentioned four experimental and four nonexperimental seven-period schools with particular attention paid to the former. In this section, we will describe how individual respondents will be selected from within the eight schools.

Principals of the eight seven-period schools will be interviewed on a range of study topics. Prior to administering the full interview, principals will be asked if another building administrator or other administrators are knowledgeable on the topics of concern to the study. In such cases, data will be collected from these other knowledgeable sources. Likely, this approach will require limited contact with the coordinator of scheduling, student counselor, and several department heads from each school.

Area office supervisors of secondary instruction who participate heavily in the scheduling implementation will be interviewed as to the extent and nature of their activities.

Some members of each school's faculty will be asked to complete a teacher questionnaire. The first step in creating a pool of teacher respondents will be to obtain a list of each school's faculty members. Every third teacher, as his or her name appears under each department heading, will be asked to complete the questionnaire. This list will be established with the assistance of knowledgeable staff at DEA. The aim will be to sample one-third of the members of each department. The questionnaire will be distributed and collected from each identified teacher by a researcher during school visits.

A subsample of these teachers will be contacted by the data collector and asked to participate in a brief, half-hour, semistructured interview. Approximately five teachers at each of the eight schools will be asked to participate in this interview; however, criteria for teacher selection will vary from school to school. The study will seek to interview teachers who by the time of the interview have already had experience directing study hall at the two experimental study hall school. Some preference will be given to teachers working the added period at the optional seven-period schools, and preference will be given to teachers with a range of experiences under the Instructionally Related Activity at the remaining four nonexperimental seven-period schools. The aim of these interviews will be to gain a direct and experience-based understanding of the impact of the scheduling alternatives and instructional activities upon teachers.

A sample of students at the four experimental schedule schools also will be surveyed. At Sherwood and Bethesda-Chevy Chase High Schools, surveys will be administered to approximately 20 percent of each school's students who enroll in study hall and approximately 20 percent of each school's students who enroll in a seventh course. Surveys will be administered to randomly selected study-hall classes and randomly selected second-period classes. (Only second-period students on a full course load will be asked to complete the survey.) The actual number of classes to be selected will be determined by final course enrollment data.

At Gaithersburg and Einstein High Schools, a similar procedure will be followed. Twenty percent of six-course and 20 percent of seven-course students will be sampled. Surveys will be administered to randomly selected seventh-period classes and randomly selected second-period classes. (Only second-period students on a six-course load will be asked to complete the survey.) The actual number of classes to be selected will be determined by final course enrollment data.

TABLE 3

Summary Distribution of School
Respondents for Seven-period Schedule*

	Experimental Schools	Non-experimental Schools	Total
Principals	4	4	8
Other School Staff and Administrators	16	16	32
Teachers	60	60	120
Transportation Administrators	2	0	2
Area Office Administrator	3	N/A	3
Students	1200	0	1200
Total	1285	80	1365

*Estimated number of respondents

INSTRUMENTS AND RESPONDENTS

In this section, the data collection instruments and activities that will be used by the study are described. The relationship of these activities to the research questions will be indicated.

SCHOOL ADMINISTRATORS

The study seeks administrative level activities, perspectives, and experiences with the alternative schedules. Generally, the kinds of information sought consists of the following:

- What was the effect of the seven-period day on scheduling of classes?
- How were the Instructionally Related Activity and study hall activities organized and administered?
- What factors might explain the extent and kind of student interest in the seven-period schedule?
- What changes, if any, would administrators make in the current seven-period schedule?

As mentioned earlier, it is possible that the respondent to be approached first, the principal, will have partial information and will guide the interviewer to other administrators including the assistant principal, the scheduling coordinator, the student counselor, or some other staff member. As the interview will be organized topically, the interviewer will continue to collect the information known by the principal on select topics and, later, fill in information gaps in interviews with one or several others. Thus, in one school, a principal may be knowledgeable about the number and kind of new course offerings while the scheduling coordinator will provide information on Instructionally Related Activity and study hall. In this case, the interview will function as a kind of "fact sheet." The number of respondents who enable completion of the fact sheet will likely vary from school to school.

Having completed this first round of school administrator interviews and reviewed information gathered, it is anticipated that the data collector may find additional questions and issues requiring clarification. In cases where the information is crucial to the study, the data collector will recontact the appropriate respondent by phone to fill information gaps for the site.

AREA OFFICE ADMINISTRATORS

At the area office level, the study will seek information from transportation administrators and supervisors of secondary instruction of experimental and nonexperimental senior high schools. The study will first assess the extent, if any, of area office involvement with local school Instructionally Related Activities; when involvement is found to be substantial, a data collector will contact the administrator by phone to seek school specific information. The purpose of the interviews with the supervisors will be to assess the extent and kind of involvement with the Instructionally Related Activity, problems encountered, and solutions devised. Although specific information will be sought, the interviewer will also explore issues that emerge during the interview.

The purpose of interviews with transportation administrators will be to gather information on the additional costs and possible problems associated with increased bus runs for optional seven-period schools. The half-hour data collection will be guided by a schedule of data required.

TEACHERS

The seven-period schedule teachers will be of interest to the study in three sometimes overlapping capacities: as managers of study hall, as instructors working with students in a shortened class period, and as participants in an Instruction Related Activity.

In each of the eight seven-period schools, the study will ask a sample of teachers to complete a 30-minute "Teacher Questionnaire"; up to 120 teachers will complete the questionnaire, averaging 15 teachers per school. The thrust of the questionnaire will be to determine teacher experience with the shortened instructional period, the Instruction Related Activity, and, when applicable, study hall.

STUDENTS OF EXPERIMENTAL SCHOOLS

A questionnaire will be administered to a sample of students at the four experimental schedule schools. Its purpose will be to assess perceptions of students on the effects of the study hall and optional seventh-period schedules in the following areas:

- Changes in the extent of students' general interest in school as a result of the new schedule
- Student interest in taking additional courses in the coming school year
- The effect of the shortened class period upon learning

RECORD REVIEW: PERTINENT DOCUMENTS AND STATISTICAL PROFILES

Three key study mandates--to identify and describe the extent of student interest in the seven-period schedule, the effect of added opportunities upon student course selection patterns, and the increased costs in staffing and resources to MCPS--will be fulfilled by collecting and analyzing pertinent school documents and statistical information.

The study will collect and review all six- and seven-period senior high school master schedules for the 1981-82 and 1982-83 school years at the Educational Services Center. Schedules of each school will be individually compared to identify the number and types of courses added and deleted from the prior and current years. The product of this analysis--added and deleted courses--will be reviewed by the data collector with a knowledgeable administrator in each of the study's eight seven-period schools to identify the changes which are the result of seven-period scheduling as opposed to some other factor. Course additions related to seven-period scheduling will be compared across the 22 schools to identify the changes which are the result of seven-period scheduling as opposed to some other factor. Course additions related to seven-period scheduling will be compared across the 22 schools to identify trends which are the result of some other external factor(s).

Similarly, shifts in staffing in all six- and seven-period schools will be identified by comparing staffing rosters for the 1981-82 and 1982-83 school years. A knowledgeable administrator will be asked to confirm the extent to which the additions are the result of seven-period scheduling and/or some other factor such as the implementation of a new program. Staffing changes related to the new scheduling system will be compared across the 22 schools to identify trends related to the new scheduling alone and trends related to other external factors.

The extent of student interest in a seven-period schedule at the four experimental schools will be determined in three ways. First, the proportion of students enrolled in study hall relative to the total school populations at the two study hall schools will be determined from a review of enrollments rosters. Similarly, the proportion of students who opt for a six-period schedule at the two seven-period option schools will be determined from a review of enrollment rosters. The direction of student demand for special electives and advanced academic courses, one presumed benefit to students noted by seven-period advocates, will be determined by comparing course offerings and enrollment patterns within and between experimental and nonexperimental schools. Finally, a student questionnaire will be administered to a sample of students at the four experimental schools.

Finally, cost data on additional staffing and transportation expenditures under the alternative schedules will be gathered centrally at the Educational Services Center. Estimates of 1982-83 additional staffing and future staffing costs under full implementation will be based on systemwide salary averages. A similar procedure will be used for the analysis of transportation costs. Added mileage and hourly work figures will be gathered at the area offices and analyzed centrally based on systemwide data on average student transportation costs.

TABLE 4

Instruments and Respondents

Instruments/Forms	Respondents/Data Source
Administrator Interview	Principal Assistant Principal Scheduling Coordinator Student Counselor
Area Office Interview	Supervisor of Secondary Instruction Transportation Administrator
Teacher Questionnaire and Interviews	Teachers of Eight Seven-period Schools
Data Sheets: Courses Added/Deleted Staff Added/Deleted Student Population	School Master Schedules Enrollment Statistics 1981-82 and 1982-83
Student Questionnaire	Students at Experimental Schedule Schools

DATA COLLECTION

In this section, plans are detailed for collecting data from each of the schools. A data collector will be responsible for administering all questionnaires, conducting interviews, and gathering all pertinent school statistics through the local school, at the area office, and at the Educational Services Center. Here is a summary of the plan:

Before formally entering any of the schools, the study staff will write each school principal a letter explaining the nature of the study and the study's data collection needs. The letter also will tell the principals of the study's intention to telephone them to arrange an appointment. One week later, a data collector will follow up the letter with an initial telephone call.

The study will attempt to schedule a full day of administrative appointments--principal, administrator of scheduling, assistant principal, departmental heads, etc., for each school visit. At the time of this initial visit, a schedule to administer teacher and student questionnaires, conduct teacher interviews, and follow-up on tasks not completed on the initial visit will be established.

DATA ANALYSIS

Statistical information pertaining to the student population of each school, the pattern of course offerings, average class size, and staffing changes will be collected for all schools through resources at the Educational Services Center.

In the analysis of data, the staff will be guided by two purposes:

- To describe accurately the dynamics of implementation of a seven-period schedule--its effects upon student course selection, advantages and disadvantages to each school, and the working of study hall and the Instructionally Related Activity period
- To determine the differential effects of the alternative scheduling systems by ascertaining the influence of local school factors

To achieve both purposes, the study will use quantitative and qualitative data in concert. The qualitative data will consist principally of field notes from interviews; the quantitative data will consist of statistical profiles of shifts in staffing, course selection, transportation costs, and the like as well as teacher and student surveys. These data will be organized and analyzed around categories that are common across schools as well as on an individual school basis.

The proposed data analysis activities will vary according to the stated research goals and the types of data to be collected. Data analysis activities can be summarized as follows:

- A statistical description summarizing shifts in staffing, student course selection, and transportation system activities. The description will be comprised of statistical information on each school site and serve as the basis for a comparative analysis from within and across senior high schools.

  This comparison will consists of three steps. First, 1982-83 and 1981-82 statistical information on student course selection, staffing, etc., will be compared on a school-by-school basis. This comparison will better enable the study to identify changes that are the result of the new scheduling system and not other factors such as the general decline in the student population. Second, comparison also will be made within each of the following groupings of schools: schools on a six-period schedule and schools in each of the three seven-period schedule alternatives. This comparison will better enable the study to identify changes that are the result of scheduling and not some unrelated change or condition such as school size or location. A third comparison will be made between all six- and all seven-period schools to identify schedule-related differences. This will enable the study to assess overall effects of the six- and seven-period schedules.

  Additionally, this data will serve as a reference for basic information pertaining to the new scheduling system.

  The study also will compile a basic statistical summary of the changes made within the transportation system to accommodate the optional seven-period schedule. This data will address research questions concerning increases or decreases in work load and costs related to the added bus runs. Additionally, the study will estimate the magnitude of possible further cost increases should all senior highs go to an optional seven-period schedule.

- Analysis will extend from description and comparison of statistical information to construction of eight case study profiles of the four experimental and four nonexperimental schools. Case study data consist primarily but not exclusively of field notes from administrator and teacher interviews. The data corpus will be reviewed to identify those responses to the new scheduling systems which are common to all or many of the respondents. Qualitative data will be examined on an individual school basis and, at times, in the aggregate. It is anticipated that these data will provide a more detailed and dimensional understanding of the effects of the three seven-period schedules as they pertain to the reduced length of class, study hall, and the Instructionally Related Activity.

  The case studies will be supplemented by a quantitative analysis of teacher and student survey data. Survey data from each school will provide a statistical profile of the distribution of the experiences and reactions of teachers and students. Quantitative and qualitative

data will be used in tandem to enhance understanding of the information yielded by the other.*

Analysis of survey data will proceed in steps. Initially, the study will obtain descriptive statistics for all survey variables. The statistics at this level of analysis for some of the variables will serve to answer such research questions as how many teachers use their Instructionally Related Activity time to work with students independently or in small groups. The study also will isolate variables which merit further analysis by virtue of the displayed variances as well as transform the metrics of key study variables to enable further analysis.

The study also is interested in the interrelationships between survey variables. The mode of statistical treatment of these variables will differ according to the nature of the data to be analyzed. The joint distribution of categorical variables such as type of alternative schedule, means of transportation to and from school, and enrollment in an additional course offering will be analyzed through a two-way frequency distribution. The direction and strength of such teacher survey interval variables as percentage of Instructionally Related Activity time spent working with students and length of time teaching at the local school will be measured by such indicators as the correlation coefficient. A one-way analysis of variance will be used to analyze the interrelationship between such interval and categorical variables as the length of Instructionally Related Activity time instructing students and change in teacher workload under the new schedule.

- The results of all the analytic approaches mentioned above will be further distilled and moved to a final cost effectiveness analysis, presenting benefits of the new scheduling system (financial, organizational, and educational; anticipated and unanticipated) and problems, solved and lingering. Transportation system findings, including an analysis of costs, should all senior high schools be put on an optional seven-period schedule, will be part of this analysis. Costs and benefits will be analyzed on an individual school basis and for all schools.

*As this study's mandate is broad--to determine the effects of <u>different</u> schedules upon schools, students, and teachers--the unit of analysis will frequently shift from the level of the individual school to teachers, students, and/or administrators of all or some schools. These shifts will be made explicit in the final report.

PLANNED REPORT

The projected product of the study is intended to include the following:

A. Preliminary Report. A brief report to be presented in fall, 1982, summarizing shifts in school staffing, student course selection, and transportation system adjustments for the first semester.

B. Full Study Report. A report analyzing all study data to be completed by August, 1983. This report will include findings on the effects of experimental scheduling, including case studies and teacher and student survey finding; comparative analysis of enrollment patterns in experimental, nonexperimental, and six-period schools; and comparative analysis of the costs, benefits, and the relative cost effectiveness of alternative schedules.

C. Supplemental Report. A brief document summarizing second semester information on topics considered in the preliminary report noting shifts in enrollment, staffing, and transportation activities as well as costs during the second semester.

SCHOOL CHARACTERISTICS, SCHEDULING, AND COURSE OFFERINGS

Question	Data Required	Access	Data Source	Methods	Comments
1. SCHOOL CHARACTERISTICS					
a. What is the student population of each school?	o Number of students	1	o Statistical records	o Record Review	
b. What grade levels are taught?	o Number of grade levels	1	o Same	o Same	
c. What kinds of special programs, if any, does each school have?	o Description of special programs	1	o Same	o Same	
o Numbers of students and teachers involved	o Number of students and teachers				
o Extent of participation in seven-period day	o Description of special program schedule	1			
d. What is the composition of the student population?	o Relevant student information	1	o Same	o Same	
o Sex o Grade level o Race					
e. Is the school urban, suburban, or rural?	o Assessment of school	1	o Same	o Same	
f. What proportion of students are college bound?	o Estimated proportion of college bound students	1	o MCPS graduate student survey	o Record review of trends in prior years	

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Question	Data Required	Access	Data Source	Methods	Comments
g. What are the administrative, professional, and support staff populations at each school?	o Number of administrative, professional, and support staff at each school	1	o Personnel statistics	o Record review	
h. What means of transportation do students use to get to and from school? How many: o bus o walk o drive individually o car pool	o Number of students at each school who use the following modes of transportation: bus, walk, drive individually, car pool	2	o Transportation records	o Record review	
i. What kinds of extracurricular activities are provided by each school and how many students participate?	o Types and number of students involved in extracurricular activities	1	o Central Office records	o Record review	
j. Did the school have prior experience with a seven-period schedule?	o School scheduling history	1	o Administrator	o Interview	
2. SCHEDULING					
a. What is each school's current timetable? o Duration of instruction o Passing o Lunch o Beginning and ending of school day	o 1983 timetables of individual schools	1	o School schedule	o Record review	

Question	Data Required	Access	Data Source	Methods	Comments
b. How does the current timetable differ from prior years' six-period timetable?	o 1982 timetables of individual schools	1	o School schedule	o Same	
c. How do six- and seven-period schools' current timetables differ from one another?	o 1982 and 1983 timetables of individual schools	1	o School schedule	o Same	o Timetables will be compared across schools
d. How did timetable changes affect each seven-period school's extracurricular activities? o Number and type of activities o Scheduling changes o Number of student participation	o Number and type of activities Scheduling changes Student participants	1	o Administrator Students	o Interview and questionnaire	
e. What problems, if any, were created by the new timetables? o What solutions were tried? o Were some more effective than others?	o Descriptions of problems and solutions Justification for actions	1	o Administrator and teacher	o Interview	
f. How does the seven-period day increase flexibility in scheduling classes? o For schools o For students	o Description of added options currently available	1	o Administrator Master schedules Students	o Interview Record review Questionnaire	
g. What is the effect of the seven-period day on the scheduling of "singletons"? o Have the number of singleton course offerings changed in Category I, in Category II, and other offerings?	o Description and comparison of prior and current practices	1	o Master schedules	o Record review	

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Question	Data Required	Access	Data Source	Methods	Comments
3. COURSE OFFERINGS					
a. To what extent did schools increase the number of course offerings under the seven-period schedule?	o 1981-82 and 1982-83 Master Schedules from all schools	1	o Master schedules of 22 senior high schools	o Record review	
b. What were the additional courses offered by each seven-period school?	o Same	1	o Same	o Same	
c. To what extent did schools increase the variety of course offerings under the seven-period schedule?	o Same	1	o Same	o Same	
d. How did experimental and non-experimental schools differ in the number and variety of course offerings?	o 1981-82 and 1982-83 Master Schedules from all seven-period schools	1	o Same	o Same	
e. How did six- and seven-period schools differ in extent of increase or decrease of course offerings?	o 1981-82 and 1982-83 Master Schedules from all schools	1	o Same	o Same	
f. Are there differences between large and small schools in the extent to which elective classes are offered?	o Same	1	o Same	o Same	
g. What is each school's current average class size for Categories I, II, and other courses?	o Same	1	o Same	o Same	
h. Are these class sizes comparable to those occurring under a six-period schedule for seven-period schools in the prior school year?	o Same	1	o Same	o Same	

Question	Data Required	Access	Data Source	Methods	Comments
1. To what extent are between-school differences in course offerings the result of factors other than the seven-period schedule? o Student composition o Proportion of students bussed o Duration of bussing o Proportion of academically oriented students o Extent of parental support o Other external community features	o Student composition o Proportion of students bussed o Duration of bussing o Proportion of academically oriented students o Extent of parental support o Other external community features	1	o Statistical records of individual schools and affiliated transportation units, parents, principals, teachers, scheduling administrator		
j. How did each school decide which additional course to offer?	o Description of decision process		o Administrators	o Interview	
k. What kinds of courses were emphasized by each school?	o Same		o Course Lists	o Record review	
4. ORGANIZATIONAL CHANGES					
a. How much additional staff did each school require? o Administrators o Professional o Support staff	o Extent to which staff was added in administrative, professional, and support capacities	1	o Staffing records	o Senior high certificated staff o Record review	o Allocations FY 82, FY 83
b. Did added courses meet student scheduling demands?	o Extent to which student demand matched courses offered	2	o Statistical records Preenrollment records	o Record review	
c. How much and what kind of additional material resources did each school require?	o Extent of increase in supplies and other resources	1	o Principal Area Office administrator	o Record review	

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Question	Data Required	Access	Data Source	Methods	Comments
d. How did experimental and non-experimental schools differ in their needs for additional staffing and resources?	o Same	1	o Comparison of interview data from school administrator	o Record review to assess increases in each school	o Changes in staffing and material resources will be compared across schools
e. Where have staffing changes been most pronounced?	o Lists of staffing changes from all schools	2			
5. IMPLEMENTATION					
a. What practices were employed by the schools to increase awareness of students and parents of new seven-period schedule?	o List of modes of communication, targets of communication, frequency of communication	1	o Principal	o Interview	
o Was the initial response positive or negative?	o (+) student/parent response (-) student/parent response		o Administrator	o Interview	
o What reasons were given?	o list student/parent reasons		o Same	o Interview	
o What were the activities of the principal?	o Activities of principal		o Principal	o Interview	
o What were the activities of guidance counselors?	o Activities of counselor		o Counselor	o Interview	
o What other school personnel were involved?	o Activities of teachers and others		o Other administrators	o Interview	
b. How many students at each experimental school enrolled in and completed a seven-course schedule?	o Course enrollment summary statistics by student grade level and designated major	2	o First semester summary statistics o Students	o Record review o Questionnaire	
o Grade level o Academic orientation					

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Question	Data Required	Access	Data Source	Methods	Comments
c. To what extent did additional course offerings match student demand in all seven-period schools?	o Survey results of seven-period schools' student interest surveys	3	o Survey results of seven-period schools' student interest survey	o Record review	o Several schools conducted a survey to assess the courses of interest to students under a seven-period day. These findings will be compared to actual enrollment patterns.
	o Student activities	1	o Students	o Questionnaire	
d. Why did some students decline participation in a seven-period course schedule at experimental schools?	o Reasons given for non-participation	3	o Counselors o Students	o Interview o Questionnaire	
e. What do teachers consider to be the advantages/disadvantages of the experimental program options?	o Reasons given (+) and (-)	3	o Teachers	o Interview and questionnaire	
f. To what extent did students who completed graduation requirements enroll in an additional course at an experimental school?	o Senior level course summary statistics	1	o Summary statistics	o Record review	
g. Did students take more electives and advanced academic courses compared to the prior school year?	o Master schedule	1	o Master schedules of all senior high schools for 1981-82 and 1982-83	o Same	
h. What were the effects of the scheduling experiments upon students' attitudes toward school, homework, shortened class instruction?	o Student attitudes toward school, homework, shortened class instruction	1	o Student survey	o Questionnaire	

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Question	Data Required	Access	Data Source	Methods	Comments
6. TRANSPORTATION					
a. How many students are bussed at each seven-period school?	o Number of students bussed	1	o Transportation administrator, Transportation report	o Record review	
		1	o Students	o Questionnaire	
b. What is the average duration of travel for bussed students? o at all seven-period schools o for optional seven-period students o for optional six-period students	o Average duration of travel	1	o Transportation administrator o Students	o Record review o Questionnaire	
c. How many bussed students take a seven-course schedule at experimental schools?	o Number of bussed students in seven-course schedule	1	o Enrollment records o Students	o Interview, record review o Questionnaire	
d. What are the added transportation costs for optional-period schools? o Mileage o Gas consumption o Number of bus runs o Additional work hours	o Mileage, gas used, hours worked, number of bus runs related to optional period	1	o Transportation administrator Driver manifest	o Record review	
e. Does optional-period schedule create scheduling conflicts with other schools? o What are the problems currently? o What solutions were tried? o What problems are anticipated?	o Statement of past and possible future problems as well as solutions considered	1	o Transportation administrator	o Interview and record review	

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Question	Data Required	Access	Data Source	Methods	Comments
f. Would system-wide optional period create additional transportation problems and costs?	o Statement of logistical problems o Approximation of added costs	2	o Transportation administrator	o Interview	
g. What is the effect of coming to or leaving school early or late upon student interest in an additional seventh course?	o Number of bussed students in seven-course schedule	1	o Enrollment records o Students	o Record review o Questionnaire	
7. THE INSTRUCTION RELATED ACTIVITY					
a. What are the different kinds of IRA's implemented by the schools?	o List of uses of IRA time	1	o Administrator Teacher	o Interview and questionnaire	
b. What procedures were used to develop and implement IRA's?	o List of procedures used to develop IRA	1	o Same	o Same	
c. How were IRA's scheduled	o Scheduling techniques	1	o Administrator	o Interview	
d. What kinds of problems, if any, did schools encounter in conducting IRA's?	o Statement of problems encountered (+), (-)	1	o Same	o Same	
e. What proportion of teacher IRA time was spent in different kinds of activities with students? o Instructing students (individually, in small groups) o Instructional planning o Participation in special projects such as clubs or assemblies	o Distribution of teacher work time	1	o Administrator and teacher	o Interview and questionnaire	

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Question	Data Required	Access	Data Source	Methods	Comments
o Remedial work with students o Other					
f. By what means were IRA teacher and student schedules coordinated?	o Scheduling techniques	1	o Administrator and teacher	o Interview and questionnaire	
g. What benefit, if any, did students derive from additional instructional assistance?	o List of benefits noted	1	o Teachers	o Same	
h. What proportion of teacher IRA time was spent alone or with other teachers in: o Planning alone o Common planning period o Interdisciplinary team meetings o Departmental meetings	o Distribution of teacher work time	1	o Teachers	o Same	
i. By what means were IRA schedules coordinated to accomplish (h.)?	o Scheduling techniques	1	o Administrator	o Interview	
j. What were the perceived advantages and disadvantages of the IRA? o Problems o Solutions attempted	o List of advantages and disadvantages	1	o Administrator and teacher	o Interview and questionnaire	
8. STUDY HALL IN THE EXPERIMENTAL SCHOOL					
a. What was the average class size of study hall?	o Enrollment lists of study hall students at study hall schools	1	o School enrollment statistics	o Record review	

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uestion	Data Required	Access	Data Source	Methods	Comments
b. How was study hall scheduled and staffed?	o List of techniques used to schedule and staff	1	o Administrator	o Interview	
c. What proportion of teacher IRA time was spent in study hall?	o Estimate of teacher time in study hall	1	o Teachers	o Questionnaire	
d. How was study hall conducted? o What problems did teachers encounter? o What solutions were attempted? o What supervision techniques were used?	o Teacher experience, (+)/(-), with study hall	1	o Study hall teachers	o Interview	
e. What were study hall rates in the following areas: o Absences o Cuts o Tardiness	o Study hall teacher estimates of absences, cut, and tardiness	1	o Study hall teachers	o Interview	
f. Did rates differ from school averages?	o Study hall teacher estimate of school average	1	o Study hall teachers	o Interview	
g. What was the composition of students enrolled in study hall? o Grade level	o Student grade level	1	o Study hall class roster	o Record review	

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Question	Data Required	Access	Data Source	Methods	Comments
9. SIDE EFFECTS					
a. What were the indirect effects, if any, of the seven-period schedule upon: o Attendance patterns o Disruptive activities o Class cuts o Level of student interest in school o Supervision	o Rate of absence for current and prior year o Teacher estimate of disruptive activity and class cuts o Classdrops 1981-82 and 1982-83 school years o Teacher estimates of extent of change (+)/(-) in student interest o Teacher estimate of change (+)/(-) in supervision	2 1 1 1	o 1981-82 and 1982-83 (most recent) statistics on suspension and attendance, students o Administrator and teacher	o Record review, questionnaire o Interview and questionnaire	
b. What are the indirect effects, if any, of the seven-period schedule on: o Teacher work load o Counselor work load o Student work load	o Estimates of teacher work load o Estimates of counselor work load	1 1 1	o Teachers Counselors Students	o Interview, questionnaire	
c. What is the effect of the reduced length of instruction?					
o Were some kinds of classes affected more negatively/positively than others?	o Estimates of changes in instructional activity	1	o Administrators, teachers, and students	o Same	
o What was the effect upon lab, voc. ed., P.E., and other duration-sensitive courses?	o Same	1	o Administrator and master schedule	o Interview and record review	

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Question	Data Required	Access	Data Source	Methods	Comments
o What do teachers consider the effect to be upon students on different grade levels?	o Same	1	o Teachers	o Interview and questionnaire	
d. What effect, if any, does the seven-period schedule have on other system policies and practices and vice versa? o From an administrator perspective, what is the effect of the Board rule that students enroll in a full course schedule upon the seven-period day? o How doe these policies affect students?	o Estimate of extent and kind of effects of seven-period schedule on other policies and programs	1	o Administrator	o Interview	
e. Will the seven-period schedule enable more students to graduate early?	o Estimates of the possible change in early graduation rates	2	o Summary statistics	o Record review	

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